

1.9 Solving a Linear System using Algebra - Elimination

p. 101 #1. question #1 a

$$\begin{array}{l} \textcircled{S_1} \quad \textcircled{1} \quad x + y = 15 \\ \quad \quad \textcircled{2} \quad x - y = 1 \end{array}$$

$$\textcircled{1} + \textcircled{2} \quad 2x + 0 = 16$$

$$\textcircled{S_2} \quad 2x = 16$$

$$x = 8$$

$\textcircled{S_3}$ use $x=8$ to solve for y .

sub $x=8$ into $\textcircled{1}$.

$$8 + y = 15$$

$$y = 7$$

$\textcircled{S_4}$ check $(8, 7)$

$\textcircled{1}$	$\textcircled{2}$
$\frac{LS}{=x+y}$	$\frac{LS}{=x-y}$
$\frac{RS}{=8+7}$	$\frac{RS}{=8-7}$
$=15$	$=1$

$\textcircled{S_5}$ $\therefore (8, 7)$ makes both equations true.
 \therefore it is the solution.

$$\textcircled{1b} \quad \begin{array}{l} x + 1y = 15 \\ x - y = 1 \end{array}$$

$$\textcircled{1} - \textcircled{2} \quad x + 2y = 14$$

$$y = 7$$

p. 107.

#3d) ① $3x - y = 3$

② $y - 2x = -2$

① } rearrange ②

General $Ax + By = C$

① $3x - y = 3$

② $-2x + y = -2$

① + ② $x + 0 = 1$

⑤ $\left\{ \begin{array}{l} x = 1 \end{array} \right.$

⑥ sub $x=1$ into ①

$3(1) - y = 3$

$3 - y = 3$

$-y = 3 - 3$

$-y = 0$
 $y = 0$

$y = mx + b$

$Ax + By + C = 0$

⑦ Check $(1, 0)$
on your own.
⑧ make your
conclusions.

#4)

a) $\begin{cases} ① & 3x + y = 9 \\ ② & x - 2y = -7 \end{cases}$

$$\left[\begin{array}{l} ① & 3x + y = 9 \\ ② \times 3 & \rightarrow 3x - 6y = -21 \end{array} \right]$$

$$① - ② \quad 0 + 7y = 9 - (-21)$$

$$7y = 30$$

$$y = \frac{30}{7}$$

$$\begin{array}{l} 1 - (-6) \\ = 1 + 6 \\ = 7 \end{array}$$

b)

$$\begin{cases} ① & 3x + y = 9 \\ ② & x - 2y = -7 \end{cases}$$

$$\begin{array}{l} 2x \times ① & 6x + 2y = 18 \\ ② & x - 2y = -7 \end{array}$$

$$① + ② \quad 7x + 0 = 11$$

$$\begin{array}{l} 7x = 11 \\ x = \frac{11}{7} \end{array}$$

prog #5) let "x" rep. the
speed of the plane.
y = wind speed

$$\textcircled{1} \quad x + y = \frac{960 \text{ km}}{2.5 \text{ hrs.}}$$

$$\textcircled{2} \quad x - y = \frac{960 \text{ km}}{3 \frac{1}{3} \text{ hrs}}$$

Todo's ~~1.8~~ BN, #1-8 add
→ worksheet

$$\textcircled{V = \frac{D}{T}}$$